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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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STAAS & HALSEY LLP
SUITE 700
1201 NEW YORK AVENUE, N.W.
WASHINGTON, DC 20005

EXAMINER

RAO, ANAND SHASHIKANT

ART UNIT	PAPER NUMBER
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2613

DATE MAILED: 04/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/812,789

Applicant(s)

TAKENAKA, YUUJI

Examiner

Andy S. Rao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Specification

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aono et al., (hereinafter referred to as "Aono") in view of Saunders et al., (hereinafter referred to as "Saunders").

Aono discloses an image control apparatus for controlling a process of coding an image signal (Aono: figure 9), comprising: a comparison processing means (Aono: column 6, lines 25-30) for carrying out at least one of a first comparison process to compare a motion vector (Aono: column 7, lines 30-47) with a threshold (Aono: column 7, lines 1-15), a second comparison process to compare a motion compensated predictive error (Aono: column 7, lines 55-67; column 8, lines 1-10), and a third comparison process to compare a difference value produced by subtracting the motion compensated predictive error from an interframe difference (Aono: column 6, lines 40-50) with a threshold (Aono: column 7, lines 1-15), as in claim 1. However,

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Aono fails to disclose a repetitive number control number means for adaptively controlling the number of repeated B pictures to be inserted into a stream based on the compared result of the comparison process as specified. Saunders discloses a repetitive number control means for adaptively controlling a number of B pictures to be inserted into an image control apparatus (Saunders: column 3, lines 20-45) in order to save on hardware requirements (Saunders: column 3, lines 47-54). Accordingly, given this teaching, it would have been obvious for one of ordinary skill in the art to incorporate the use of Saunders repetitive number control means into the Aono image control apparatus, in order to said of hardware requirements in the Aono apparatus. The Aono apparatus, now incorporating the use of the Saunders repetitive number control means, has all of the features of claim 1.

Regarding claim 2, the Aono apparatus, now incorporating the use of the Saunders repetitive number control means, has means for increasing said number of repeated B pictures (Saunders: column 3, lines 35-45- "converting an I frame to a B frame") if said motion vector is determined to be as smaller (Aono: column 7, lines 30-47) than said threshold in said first comparison process (Aono: column 7, lines 1-15), and decreasing said number of repeated B pictures (Saunders: column 3, lines 35-45- "converting an B frame to a P frame") if said motion vector is determined as greater (Aono: column 7, lines 30-47) than said threshold in said first comparison process (Aono: column 7, lines 1-15), as in claim 2.

Regarding claim 3, the Aono apparatus, now incorporating the use of the Saunders repetitive number control means, has means for increasing said number of repeated B pictures (Saunders: column 3, lines 35-45- "converting an I frame to a B frame") if said motion compensated predictive error (Aono: column 7, lines 55-67; column 8, lines 1-10) is determined

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to be as smaller (Aono: column 7, lines 30-47) than said threshold (Aono: column 7, lines 1-15), and decreasing said number of repeated B pictures (Saunders: column 3, lines 35-45- “converting an B frame to a P frame”) if said motion compensated predictive error (Aono: column 7, lines 55-67; column 8, lines 1-10) is determined as greater than said threshold (Aono: column 7, lines 30-47), as in claim 3.

Regarding claim 4, the Aono apparatus, now incorporating the use of the Saunders repetitive number control means, has means for increasing said number of repeated B pictures (Saunders: column 3, lines 35-45- “converting an I frame to a B frame”) if said difference value (Aono: column 6, lines 39-53) is determined to be as greater (Aono: column 7, lines 30-47) than said threshold (Aono: column 7, lines 1-15), and decreasing said number of repeated B pictures (Saunders: column 3, lines 35-45- “converting an B frame to a P frame”) if said difference value (Aono: column 6, lines 39-53) is determined as smaller than said threshold (Aono: column 7, lines 30-47), as in claim 4.

Regarding claim 5, the Aono apparatus, now incorporating the use of the Saunders repetitive number control means, has means for relating the first, second, and third comparison results to each other (Aono: column 6, lines 30-37) to increase hold or decrease the number of repeated B pictures (Saunders: column 3, lines 35-45), as in the claim.

4. Claims 6-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kazui et al., (hereinafter referred to as “Kazui”) in view of Toebe, VIII et al., (hereinafter referred to as “Toebe”).

Kazui discloses an image control apparatus for controlling a processing of coding an image signal (Kazui: figure 1), comprising: a scene change detecting means for detecting the

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occurrence of a scene change based on an interframe difference average representing an average of interframe differences over one picture (Kazui: column 6, lines 5-30), as in claim 1. However, Kazui fails to disclose a picture insertion control means for inserting an I picture into a stream if a scene change is detected, as in the claim. Toebe discloses a picture inserting control means for inserting an I picture into a stream for an image controlling apparatus (Toebe: column 18, lines 27-67; column 19, lines 1-54) in order effect smooth meaningful transitions between scenes (Toebe: column 6, lines 25-44). Accordingly, given this teaching, it would have been obvious for one of ordinary skill in the art to incorporate the use of Toebe repetitive number control means into the Kazui image control apparatus, in order to said of hardware requirements in the Kazui apparatus. The Kazui apparatus, now incorporating the use of the Toebe picture insertions means, has all of the features of claim 6.

Regarding claim 7, the Kazui apparatus, now incorporating the use of the Toebe picture insertion means, has means for detecting the occurrence of a scene change if said interframe difference average is greater than a threshold (Kazui: column 6, lines 35-45), as in the claim.

Regarding claim 8, the Kazui apparatus, now incorporating the use of the Toebe picture insertion means, has means for detecting the occurrence of a scene change if the number of blocks in which the difference between a block average of pixel data in each of the blocks converted from a picture (Kazui: column 6, lines 4-29; column 7, lines 1-25) and the interframe difference average is greater than a given value (Kazui: column 6, lines 35-45), as in the claim.

Regarding claim 9, the Kazui apparatus, now incorporating the use of the Toebe's picture insertion means, has means for detecting the occurrence of a scene change if said interframe difference average is greater than a threshold (Kazui: column 6, lines 35-45), and the

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number of blocks in which the difference between a block average of pixel data in each of the blocks converted from a picture (Kazui: column 6, lines 4-29; column 7, lines 1-25) and the interframe difference average is greater than a given value (Kazui: column 6, lines 35-45), as in the claim.

Regarding claim 10, the Kazui apparatus, now incorporating the use of the Toebe's picture insertion means, has means for detecting the occurrence of a scene change if said interframe difference average is greater than a given value (Kazui: column 6, lines 35-45), and represents an abrupt change (Kazui: column 6, lines 15-20), as in the claim.

Regarding claim 11, the Kazui apparatus, now incorporating the use of the Toebe's picture insertion means, has means for detecting the occurrence of a scene change if said interframe difference average is greater and lower than a given value (Kazui: column 6, lines 35-45), and represents an abrupt change (Kazui: column 6, lines 15-20), as in the claim.

5. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aono et al., (hereinafter referred to as "Aono") in view of Toebe, VIII et al, (hereinafter referred to as "Toebe") and Kazui et al., (hereinafter referred to as "Kazui").

Aono discloses an image control apparatus for controlling a process of coding an image signal (Aono: figure 9), comprising: a comparison processing means (Aono: column 6, lines 25-30) for carrying out at least one of a first comparison process to compare a motion vector (Aono: column 7, lines 30-47) with a threshold (Aono: column 7, lines 1-15), a second comparison process to compare a motion compensated predictive error (Aono: column 7, lines 55-67; column 8, lines 1-10), and a third comparison process to compare a difference value produced by subtracting the motion compensated predictive error from an interframe difference (Aono:

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column 6, lines 40-50) with a threshold (Aono: column 7, lines 1-15), as in claim 12. However, Aono fails to disclose a repetitive number control number means for adaptively controlling the number of repeated B pictures to be inserted into a stream based on the compared result of the comparison process as specified, a scene change detecting means for detecting the occurrence of a scene change based on an interframe difference average representing an average of interframe differences over one picture, and a picture insertion control means for inserting I pictures into a stream if a scene change is detected, as in claim 12. Kazui discloses a scene change detecting means for detecting the occurrence of a scene change based on an interframe difference average representing an average of interframe differences over one picture (Kazui: column 6, lines 5-30) in order to accurately detect scene changes in transmitted video (Kazui: column 2, lines 10-20). Given this teaching, it would have been obvious for one of ordinary skill in the art to incorporate the teaching of Kazui's scene change detecting means into the Aono image control apparatus in order to have the Aono apparatus be able to pick up scene changes. The Aono image control apparatus, now incorporating Kazui scene change means, has the most of the features of claim 12, but still lack a repetitive number control number means for adaptively controlling the number of repeated B pictures to be inserted into a stream based on the compared result of the comparison process as specified and a picture insertion control means for inserting I pictures into a stream if a scene change is detected, as in the claim. Toebe discloses a streaming apparatus having both a repetitive number control number means for adaptively controlling the number of repeated B pictures to be inserted into a stream based on the compared result of the comparison process as specified (Toebe: column 25, lines 21-62) and a picture insertion control means for inserting I pictures into a stream if a scene change is detected (Toebe: column 18, lines 27-67;

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column 19, lines 1-54) in order to effect smooth meaningful transitions between scenes (Toebe's column 6, lines 25-44). Accordingly, given this teaching, it would have been obvious for one of ordinary skill in the art to incorporate the use of Toebe's repetitive number control means and picture insertion means into the Kazui image control apparatus, in order to have the Aono-Kazui combination effect smooth meaningful transitions between scenes. The Aono image control apparatus, now incorporating Kazui's scene change detecting means and Toebe's repetitive number control means and picture insertions means, has all of the feature of claim 12.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Morimoto discloses a data hiding and extraction method. Maruya discloses a moving picture synthesizing device. Wilkinson discloses motion compensated video processing. Van Den Enden discloses a method and arrangement for recording and reproducing video images.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andy S. Rao whose telephone number is (703)-305-4813. The examiner can normally be reached on Monday-Friday 8 hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris S. Kelley can be reached on (703)-305-4856. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Andy S. Rao

Primary Examiner

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ANDY RAO
PRIMARY EXAMINER



asr

April 23, 2004